

CLAIMS

I claim:

- 1 1. An imaging system comprising:
- 2 An image sensing circuitry that produces a raw image data;
- 3 An image processing circuitry, communicatively coupled to the image sensing
- 4 circuitry, that processes the raw image data into a processed image data;
- 5 A transformation circuitry, communicatively coupled to the image processing
- 6 circuitry, that transforms the processed image data into a final image data;
- 7 A communication circuitry, communicatively coupled to the transformation
- 8 circuitry, that links the imaging system to a final storage;
- 9 An intermediate storage queue, communicatively coupled to the image processing
- 10 circuitry, that stores one or more image data; and
- 11 The intermediate storage queue storing one or more image data awaiting
- 12 additional processing by the imaging system.
- 1 2. The imaging system of claim 1 wherein the intermediate storage queue is
- 2 communicatively coupled to the image sensing circuitry and stores one or more raw
- 3 image data, the one or more raw image data being delivered to the image processing
- 4 circuitry upon the occurrence of an event.
- 1 3. The imaging system of claim 2 wherein the one or more raw image data is held in
- 2 the intermediate storage queue while the image processing circuitry is processing another
- 3 image data, and one of the one or more raw image data is delivered to the image
- 4 processing circuitry when the image processing circuitry ceases processing on the another
- 5 image data.
- 1 4. The imaging system of claim 2 wherein additional raw image data are stored in
- 2 the intermediate storage queue, and each of the raw image data stored in the intermediate
- 3 storage queue are delivered to the image processing circuitry when the amount of raw
- 4 image data in the intermediate storage queue reaches a predetermined level.

1 5. The imaging system of claim 1 wherein the intermediate storage queue is
2 communicatively coupled to the transformation circuitry and stores one or more
3 processed image data, the processed image data being delivered to the transformation
4 circuitry upon the occurrence of an event.

1 6. The imaging system of claim 5 wherein the one or more processed image data is
2 held in the intermediate storage queue while the transformation circuitry is processing
3 another image data, and one of the one or more processed image data is delivered to the
4 transformation circuitry when the transformation circuitry ceases processing on the
5 another image data.

1 7. The imaging system of claim 5 wherein additional processed image data are
2 stored in the intermediate storage queue, and each of the processed image data stored in
3 the intermediate storage queue are delivered to the transformation circuitry when the
4 amount of processed image data in the intermediate storage queue reaches a
5 predetermined level.

1 8. The imaging system of claim 1 wherein the transformation circuitry performs a
2 compression on the image data.

1 9. The imaging system of claim 1 further comprising a processing circuitry
2 monitoring the status of the intermediate storage queue.

1 10. The imaging system of claim 1, wherein the imaging system processes the image
2 data in the intermediate storage queue in response to an indication that the imaging
3 system has been linked to an external power source.

1 11. An electronic imager, the electronic imager performing processing on an acquired
2 image, the electronic imager comprising:

3 A first and a second functional imaging subsystems, each imaging subsystem
4 performing a processing step the acquired image, the first imaging functional subsystem
5 communicatively coupled to the second imaging functional subsystem and
6 communicating to the second imaging functional subsystem an image data; and

7 An intermediate image storage buffer, communicatively coupled to the first and
8 second imaging functional subsystems, the intermediate storage buffer storing one or
9 more image data communicated from the first imaging functional subsystem to the
10 second imaging functional subsystem.

1 12. The electronic imager of claim 11, the first imaging subsystem comprising an
2 image interface circuitry producing a raw image data, the second imaging subsystem
3 comprising an image processing circuitry that processes the raw image from the image
4 interface circuitry, and the intermediate image storage buffer storing one or more raw
5 image data originating from the image interface circuitry.

1 13. The electronic imager of claim 12, wherein the one or more raw images are
2 communicated to the intermediate storage buffer in response to a signal.

1 14. The electronic imager of claim 13 wherein the signal indicates that the image
2 interface circuitry is producing a raw image at a faster rate than the processing circuitry
3 can process the raw image.

1 15. The electronic imager of claim 13 wherein the signal indicates that the
2 intermediate storage buffer contains less than a predetermined amount of raw image data.

1 16. The electronic imager of claim 11, the first imaging subsystem comprising an
2 image processing circuitry producing a processed image data, the second imaging
3 subsystem comprising a transformation circuitry that processes the processed image from
4 the image processing circuitry, and the intermediate image storage buffer storing one or
5 more processed image data originating from the image processing circuitry.

1 17. The electronic imager of claim 16, wherein the one or more processed images are
2 communicated to the intermediate storage buffer in response to a signal.

1 18. The electronic imager of claim 17 wherein the signal indicates that the image
2 processing circuitry is producing a processed image at a faster rate than the
3 transformation circuitry can process the processed image.

1 19. The electronic imager of claim 17 wherein the signal indicates that the
2 intermediate storage buffer contains less than a predetermined amount of processed
3 image data.

1 20. A method of operating an imaging system, the imaging system comprising an
2 image sensor, an interface circuitry, and an image processing circuitry, the method
3 comprising the steps of:

4 Acquiring an initial image in the image sensor;

5 Producing a first image data from the initial image in the interface circuitry;

6 Processing the first image data into a second image data; and

7 Selectively storing the first image data in a buffer based on whether the step of
8 processing is already operating on a previously communicated first image data.

1 21. The method of claim 20 wherein the step of processing the first image data into a
2 second image data further comprises the step of transforming a processed image data into
3 a final image data in a transformation circuitry, and the step of selectively storing
4 comprises storing the processed image.

1 22. The method of claim 20 wherein the step of processing the first image data into a
2 second image data further comprises the step of transforming a raw image data into a
3 processed image data in an image processing circuitry, and the step of selectively storing
4 comprises storing the raw image.